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Clinical Profile of Patients Seeking Visual Impairment Certificate

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ABSTRACT

To assess the clinical profile of patients seeking visual impairment certificate. This 1-year cross sectional study consisted of 105 patients above 5 years of age with visual impairment attending Ophthalmology OPD at KIMS Hospital Hubli, seeking visual impairment certificate. The clinical profile of patients was recorded. Out of 105 cases in the study, most of them were in the age group of 20-30 years (25.7%) and above 50 years (24.8%). Mean age was 36.9 years. Oldest in the study group was 74 years and youngest was 6 years. Out of 105 patients, males were 73 (69.5%) and females were 32 (30.5%). The major cause of visual impairment in patients seeking visual impairment certificate was retinitis pigmentosa (21.9%), followed by congenital anomalies (16.2%) and least were staphyloma (1.9%) and empty socket (1.9%). Males were the most affected compared to females in most of the pathologies. The major anatomical site affected is retina (41%) followed by whole globe (30.5%). The most of the whole globe pathologies were avoidable as they were associated with trauma. Major retinal and optic nerve pathologies were non-avoidable. These findings were statistically significant as the $p<0.001$. The results have shown high number of retinitis pigmentosa and congenital diseases of eye, it explains the need for genetic counselling. Men are more common beneficiaries when compared to women showing gender bias, gender-based inequality for getting visual impairment certificates should be minimised through awareness and education of people. Integrated education has been initiated in the state as the number of integration is still low. An alternative would be to encourage low-vision classes with print education in the blind schools alongside Braille classes but this would require investment in teaching materials.

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Key Words

Retina, optic nerve, visual impairment certificate

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INTRODUCTION

Blindness is defined as, visual acuity of <3/60, a corresponding visual field loss to <10 degrees, in a better eye with the best possible correction[1]. Globally, 253 million people are living with vision impairment. Out of which, 217 million visually disabled individuals have moderate to severe vision impairment and 36 million people suffering from total blindness[2].

81% of the blind and moderate or severe visual impairment individuals are >50 years. 80% of all the causes of visual impairment are avoidable if appropriate precautions are taken, treatable if diagnosed at an early stage. 90% of the world's visually impaired individuals reside in developing countries[3,4]. Cataract is the principal cause of blindness. The other important causes of blindness are severe visual impairment, moderate visual impairment, corneal opacity, cataract surgical complications, posterior segment disorders excluding DR and ARMD and glaucoma[5]. Etiology comprised of secreased size of the optic cup, altered proteoglycans in the vitreous, low IOP, abnormal GF production and inadequate secondary vitreous production during postnatal ocular growth may contribute to micro-phthalmia. Few cases are associated with cysts, due to failure of closure of optic fissure[6] Environmental risk factors include maternal age over 40 years, multiple births, infants of low birth weight, low gestational age, gestational acquired infections like rubella, toxoplasmosis, varicella, cytomegalovirus, parvovirus B19, influenza virus and coxsackie A9, maternal vitamin A deficiency, exposure to drugs like thalidomide, warfarin and alcohol[7,8]. We performed this study to assess clinical profile of patients seeking visual impairment certificate.

MATRIALS AND METHODS

This 1-year cross sectional study consisted of 105 patients above 5 years of age with visual impairment attending Ophthalmology OPD at KIMS Hospital Hubli, seeking visual impairment certificate. Patients below 5 years of age, mentally retarded patients, patients with difficulty in speaking and patients with difficulty in hearing were excluded. Patient's consent was obtained before starting the study.

Data such as name, age, gender etc. was recorded. In all, visual acuity testing using Snellen chart. Distance and near visual acuity, both presenting and best corrected after refraction, were measured for each eye separately using Snellen chart. Stereoscopic fundus examination including assessment of the vitreous, retina and optic disc will be done at slit lamp using 90 D lens and with indirect ophthalmoscope using 20 D lens. Humphrey's visual field analysis whenever necessary and feasible. Severity of visual impairment is calculated as per the Guidelines of Ministry of Social Justice and Empowerment. The results were compiled and subjected for statistical analysis using chi-square test $p<0.05$ was set significant.

RESULTS

Out of 105 cases in the study, most of them were in the age group of 20-30 years (25.7%) and above 50 years (24.8%). Mean age was 36.9 years. Oldest in the study group was 74 years and youngest was 6 years (Table 1). Out of 105 patients, males were 73 (69.5%) and females were 32 (30.5%) (Table 2). In this study major cause of visual impairment in patients seeking visual impairment certificate was retinitis pigmentosa (21.9%), followed by congenital anomalies (16.2%) and least were staphyloma (1.9%) and empty socket (1.9%) (Table 3). In this study it was noted that males were the most affected compared to females in most of the pathologies (Table IV).

In this study major anatomical site affected is retina (41%) followed by whole globe (30.5%) (Table 5). The most of the whole globe pathologies were avoidable as they were associated with trauma. Major retinal and optic nerve pathologies were non-avoidable. These findings were statistically significant as the $p<0.001$ (Fig 1).

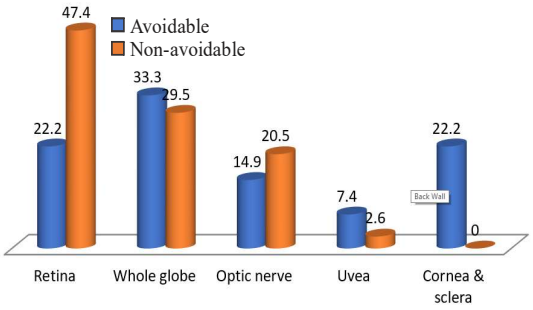

Fig. 1: Association between site of pathology and type of blindness

Table 1 Age distribution of study participants (n = 105)

Age categories	Frequency	Percentages
≤10 years	9	8.6
11-20 years	10	9.5
21-30 years	27	25.7
31-40 years	12	11.4
41-50 years	21	20.0
>50 years	26	24.8
Total	105	100.0

Table 2: Patients distribution based on gender

Total-105

Gender	Males	Females
Number (%)	73 (69.5%)	32 (30.5%)

Table 3: Causes of visual impairment

Causes	No	Percentages
Retinitis Pigmentosa	23	21.9
Congenital Anomalies	17	16.2
Other retinal pathology	13	12.4
Optic Atrophy	9	8.6
Phthsis Bulbi	9	8.6
Pathological Myopia	8	7.6
Amblyopia	7	6.7
Corneal pathologies	6	5.7
Advanced Diabetic eye disease	5	4.8
Advanced Glaucoma	4	3.8
Empty socket/Prosthesis	2	1.9
Anterior Staphyloma	2	1.9

Table 4: Causes of blindness according to gender

Causes	Males		Females		Total	
	No	%	No	%	No	%
Retinitis Pigmentosa	15	65.21	8	34.78	23	100.0
Advanced Glaucoma	3	75.0	1	25.0	4	100.0
Pathological Myopia	6	75.0	2	25.0	8	100.0
Congenital Anomalies	6	35.3	11	64.7	17	100.0
Optic Atrophy	8	88.9	1	11.1	9	100.0
Corneal pathologies	3	50.0	3	50.0	6	100.0
Phthisis Bulbi	8	88.9	1	11.1	9	100.0
Amblyopia	6	85.7	1	14.3	7	100.0
Other retinal pathology	8	61.5	5	38.5	13	100.0
Advanced Diabetic eye disease	4	80.0	1	20.0	5	100.0
Prosthesis	2	100.0	0	0.0	2	100.0
Anterior Staphyloma	2	100.0	0	0.0	2	100.0

Table 5: Distribution of anatomical site affected with respect to pathologies

Anatomical site	Frequency	Percentages
Retina	43	41.0
Whole globe	32	30.5
Optic nerve	20	19.0
Uvea	4	3.8
Cornea and sclera	6	5.7

DISCUSSIONS

National Sample Survey Organization (NSSO) had conducted a survey among the individuals with disabilities in 1981, 1991 and 2002 in India, according to which, disability was considered as, "any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being"[9]. The 58th round data from the NSSO survey, notified that, of all the disabled individuals in India 10.88% were blind and 4.39% were having low vision[9]. Certification of blindness or partial sight in India is a process of co-ordinated social services for the visually disabled individuals[10].

Out of 105 cases in the study, most of them were in the age group of 20-30 years (25.7%) and above 50 years (24.8%). The mean age was 36.9 years. The oldest in the study group was 74 years and youngest was 6 years. Out of 105 patients, males were 73 (69.5%) and females were 32 (30.5%). Males were the most affected compared to females in most of the pathologies. Sambuddha Gosh *et al*.[11] study in Kolkotta found M:F ratio being 2.37:1.

The major cause of visual impairment in patients seeking visual impairment certificate was retinitis pigmentosa (21.9%), followed by congenital anomalies (16.2%) and least were staphyloma (1.9%) and empty socket (1.9%). Increased burden of retinitis pigmentosa patients in this area warrants genetic counseling to be taken seriously. A study conducted by Joshi *et al*.[12] showed similar results. The major anatomical site affected is retina (41%) followed by whole globe (30.5%). The most of the whole globe pathologies were avoidable as they were associated with trauma. Major retinal and optic nerve pathologies were non-avoidable. Rajesh Joshi[12] study done at Yavatmal in 2013 showed 49.5% were avoidable causes and 50.5% were non avoidable causes in visually disabled. In the year 2016 study conducted by Shubhratha Sathish Hegde[13] concluded that, of the 267 patients in their study most of the patients who sought disability certificate were totally blind. The leading causes for visual impairment were congenital malformations, retinitis pigmentosa and refractive errors with amblyopia. 41.19% patients suffered from visual impairment caused by potentially preventable conditions. The burden of visual impairment can be reduced by taking necessary preventive measures with the leading causes being identified.

Srinivas Siddegowda *et al*[14] showed that in their study children and young adults constitute around one-third of disabled individuals. Men are more common beneficiaries when compared to women showing gender bias. Congenital ocular malformations and Retinitis Pigmentosa were the most common causes of certified visual disability.

CONCLUSION

As the results have shown high number of retinitis pigmentosa and congenital diseases of eye, it explains the need for genetic counselling. Men are more common beneficiaries when compared to women showing gender bias, gender-based inequality for getting visual impairment certificates should be minimised through awareness and education of people. Integrated education has been initiated in the state as the number of integration is still low. An alternative would be to encourage low-vision classes with print education in the blind schools alongside Braille classes, but this would require investment in teaching materials.

Avoidable causes (preventative and curative) of visual impairment were found in 25.7% individuals who were with phthisis bulbi, corneal opacity, diabetic retinopathy, glaucoma, retinal detachment. Avoiding trauma to eyes can reduce visual disability due to corneal scarring and infections in large extent. Early diagnosis and treatment are necessary to prevent blindness from avoidable causes like diabetic retinopathy, glaucoma and retinal detachment.

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